

FORM PTO-1390 (REV 11-2000)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER 2834-45
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371		U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.5) 09/937502 unknown
INTERNATIONAL APPLICATION NO. PCT/KR00/00273	INTERNATIONAL FILING DATE 29 March 2000	PRIORITY DATE CLAIMED 29 March 1999

TITLE OF INVENTION

CAN

APPLICANT(S) FOR DO/EO/US

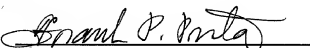
KIM, Namyoung

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☐ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.
4. ☒ The U.S. has been elected by the expiration of 19 months from the priority date (Article 31).
5. A copy of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☒ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☐ is attached hereto.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has **NOT** expired.
 - d. ☐ have not been made and will not be made.
8. ☒ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ A English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 To 20 below concern document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 C.F.R. 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 C.F.R. 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.
14. ☐ A SECOND or SUBSEQUENT preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821-1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information. IDS, PTO Form 1449 and PCT/ISA/210

U.S. APPLICATION NO. (If known, see 37 C.F.R. 1.53) 02/157502 PCT/KR00/00273	INTERNATIONAL APPLICATION NO. PCT/KR00/00273	ATTORNEY'S DOCKET NUMBER 2834-45
21. <input checked="" type="checkbox"/> The following fees are submitted:		CALCULATIONS PTO USE ONLY
BASIC NATIONAL FEE (37 C.F.R. 1.492(a)(1)-(5)): -- Neither international preliminary examination fee (37 C.F.R. 1.482) nor international search fee (37 C.F.R. 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO\$1000.00 -- International preliminary examination fee (37 C.F.R. 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO\$860.00 -- International preliminary examination fee (37 C.F.R. 1.482) not paid to USPTO but international search fee (37 C.F.R. 1.445(a)(2)) paid to USPTO\$710.00 -- International preliminary examination fee (37 C.F.R. 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4)\$690.00 -- International preliminary examination fee (37 C.F.R. 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4)\$100.00		
ENTER APPROPRIATE BASIC FEE AMOUNT =		\$ 1000.00
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 C.F.R. 1.492(e)).		\$ 0.00
CLAIMS	NUMBER FILED	RATE
Total Claims	17	\$18.00
Independent Claims	6	\$80.00
MULTIPLE DEPENDENT CLAIMS(S) (if applicable)		\$270.00
TOTAL OF ABOVE CALCULATIONS =		\$ 1240.00
<input checked="" type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.		620.00
SUBTOTAL =		\$ 620.00
Processing fee of \$130.00, for furnishing the English Translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 C.F.R. 1.492(f)).		0.00
TOTAL NATIONAL FEE =		\$ 620.00
Fee for recording the enclosed assignment (37 C.F.R. 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 C.F.R. 3.28, 3.31). \$40.00 per property		\$ 40.00
Fee for Petition to Revive Unintentionally Abandoned Application (\$1240.00 - Small Entity = \$620.00)		\$ 0.00
TOTAL FEES ENCLOSED =		\$ 660.00
		Amount to be: refunded \$
		Charged \$
a. <input checked="" type="checkbox"/> A check in the amount of \$660.00 to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. 14-1140 in the amount of \$_____ to cover the above fees. A duplicate copy of this form is enclosed. c. <input checked="" type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 14-1140. A duplicate copy of this form is enclosed. d. <input checked="" type="checkbox"/> The entire content of the foreign application(s), referred to in this application is/are hereby incorporated by reference in this application.		
NOTE: Where an appropriate time limit under 37 C.F.R. 1.494 or 1.495 has not been met, a petition to revive (37 C.F.R. 1.137(a) or (b)) must be filed and granted to restore the application to pending status.		
SEND ALL CORRESPONDENCE TO: NIXON & VANDERHYE P.C. 1100 North Glebe Road, 8 th Floor Arlington, Virginia 22201-4714 Telephone: (703) 816-4000		
 SIGNATURE		
Frank P. Presta NAME		
19,828 REGISTRATION NUMBER		September 27, 2001 Date

CANTechnical Field

The present invention relates to a beverage containing can for
5 distribution, and more particularly, to a can having an improved opening
structure of an outlet through which the beverage flows out.

Background Art

Liquor, health beverage, and soda beverage are sold in various types
10 of containers. Most containers include a cavity in which liquor or beverage
is stored, a main body where an inlet of the cavity is provided, and a seal
member for opening/closing the inlet of the main body.

FIG. 1 shows a can which is an example of the containers. As shown
in the drawing, a can 10 includes a main body 12 formed of a material such as
15 aluminum and where a cavity is provided, a seal member 14 sectioned by a
notch portion 13 on the upper surface of the main body 12 and for sealing an
inlet of the cavity 11, and a ring opener 15 riveted or welded at one side of the
seal member 14 and for separating the seal member 14 from the main body
12 by destroying a part of the notch portion 13 when the opener 15 pivots.

In the can 10 having the above structure, since the opener 15 is in
20 close contact with the upper surface of the main body 12, and since the notch
portion 13 connecting the seal member 14 and the main body 12 is destroyed
at the initial pivot of the opener 15, a great initial force for pivoting the opener
15 is needed. Thus, pivoting the opener 15 is difficult for aged or weak
25 persons, or kids. Also, women having long finger nails may have her nails
damaged while pivoting the opener 15.

Also, the seal member 14 sectioned by the notch portion 13 occupies
a small area in the can. Thus, as the opener 15 and the seal member 14 are
completely separated from the main body 12 and lost, valuable resources
30 cannot be recycled.

Disclosure of the Invention

To solve the above problems, it is an object of the present invention to provide a can having an improved structure so that the seal member can be detached from the main body by a relatively less force and the seal member
5 is not completely separated from the main body, so that resources can be recycled.

It is another object of the present invention to provide a can having a simple structure so that productivity in manufacturing can be improved.

Accordingly, to achieve the above objects, there is provided a can
10 comprising a main body having an inside cavity, a seal member sectioned by an arc shaped notch portion formed on an upper surface of the main body, a thimble portion formed at the seal member adjacent to the notch portion, and a wrinkled portion formed at the seal member to be bent in a wave shape when the notch portion of the main body is destroyed.

It is preferred in the present invention that the can further comprises an
15 initial destruction portion formed near the thimble portion for initially destroying the notch portion when the thimble portion is bent, that the initial destruction portion is formed by making the outer circumferential surface of the thimble portion sharply bent toward the notch portion at the boundary portion between
20 the thimble portion and the seal member, and that the notch portion adjacent to the initial destruction portion is formed to be deeper than the nearby notch portion.

Also, to achieve the above objects, there is provided a can comprising
a main body having a predetermined cavity for storing beverage, a seal
25 member sectioned by an arch shaped notch portion formed on an upper surface of the main body and having first and second inclined portions with respect to a support wrinkled portion formed with a step, a thimble portion formed at the seal member such that the support wrinkled portion adjacent to the notch portion can be vertically disposed at a central portion thereof, a
30 wrinkled portion formed at the second inclined portion and bent in a wave shape when the notch portion is destroyed, and an initial destruction portion

formed at a portion adjacent to the thimble portion and the notch portion for initially destroying the notch portion when the thimble portion is bent.

It is preferred in the present invention that a skirt portion is formed between an edge of the first and second inclined portions and the main body, and that a beverage flow guiding portion is formed around the notch portion on the upper surface of the main body.

Also, to achieve the above objects, there is provided a can comprising a main body having a cavity for storing beverage, a seal member sectioned by an arc shaped notch portion formed on an upper surface of the main body, a protruding tab formed at the seal member adjacent to the notch portion, and a wrinkled portion formed around the protruding tab to be bent when the notch portion is destroyed as the protruding tab is bent.

Also, to achieve the above objects, there is provided a can comprising a main body having a cavity for storing beverage, a seal member sectioned by an arc shaped notch portion formed on the upper surface of the main body, at least a pair of protruding tabs formed at the seal member, and a boundary notch portion formed between the protruding tabs.

Also, to achieve the above objects, there is provided a can comprising a main body having a cavity for storing beverage, a protruding tab disposed at the center of a circular beading portion formed on an upper surface of the main body, a central notch portion formed around the protruding tab, and a circular notch portion connected to the central notch portion and separated at a predetermined distance and having an opening on the upper surface of the main body.

Also, to achieve the above objects, there is provided a can comprising a main body having a cavity for storing beverage, a pressed tab formed by pressing a protruding portion formed by beading in a circular shape on the upper surface of the main body, and a circular notch portion connected to a central notch portion formed around the pressed tab and the central notch portion and forming an opening on the upper surface of the main body when being cut.

Brief Description of the Drawings

FIG. 1 is a partially cut-away perspective view showing a conventional can;

FIG. 2 is a perspective view showing a can according to a first preferred
5 embodiment of the present invention;

FIG. 3 is a sectional view taken along lines A-A of FIG. 2;

FIGS. 4A through 4D are sectional views showing the states in which
the thimble portion and the wrinkled portion are bent and the seal member is
separated from the main body in a can according to a first preferred
10 embodiment of the present invention;

FIG. 5 is a sectional view showing the operation of the beverage flow
guiding portion in the can according to the first preferred embodiment of the
present invention;

FIG. 6 is a plan view showing a can according to a second preferred
15 embodiment of the present invention;

FIG. 7 is a sectional view taken along lines B-B of FIG. 6;

FIG. 8 is a plan view showing a can according to a third preferred
embodiment of the present invention;

FIG. 9 is a sectional view taken along lines C-C of FIG. 8;

FIG. 10 is a plan view showing a can according to a fourth preferred
20 embodiment of the present invention;

FIG. 11 is a perspective view showing the state in which the can
according to the fourth preferred embodiment of the present invention is in
use;

FIG. 12 is a plan view showing a can according to a fifth preferred
25 embodiment of the present invention; and

FIG. 13 is a sectional view taken along lines D-D of FIG. 12.

Best mode for carrying out the Invention

30 FIG. 2 is a perspective view showing a can according to a first preferred
embodiment of the present invention. FIG. 3 is a sectional view taken along

lines A-A of FIG. 2.

As shown in the drawings, a can 20 includes a main body 22 having a cavity 21 inside and a seal member 30 having a plurality of arc shaped or circular notch portions 24 formed and sectioned on the upper surface 23 of the main body 22. First and second inclined portions 32 and 33 are formed with respect to a support wrinkled portion 31 on the seal member 30. A skirt portion 25 is formed between the upper portion 23 of the main body 22 and the first and second inclined portions 32 and 33 of the seal member 30. A thimble portion 34 is vertically formed at the central portion of the support wrinkled portion 31 on the seal member 30. A wrinkled portion 35 having a wave shape is formed at the second inclined portion 33 so that the second inclined portion 33 of the seal member is bent in a wave shape as the notch portion 24 is destroyed during the banding of the thimble portion 34. Here, the thimble portion 34 and the wrinkled portion 35 are formed by beading-processing the seal member 30. An initial destruction portion 36 is formed at the thimble portion 34 near the notch portion 24 so that the notch portion is partially and initially destroyed when the thimble portion 34 is bent. The initial destruction portion 36 is formed by sharply protruding from the thimble portion 34 to the notch portion 24. The notch portion 24 near the initial destruction portion 36 is preferably formed to be deeper than the depth of the notch portion therearound. The upper surface 23 of the main body and the notch portion 24 is preferably formed to be inclined by a predetermined angle toward the wrinkled portion 35.

A beverage flow guiding portion 26 is formed to protrude by being beading-processing the upper surface of the main body 22 around the notch portion of the upper surface 23 of the main body. The shape of the beverage flow guiding portion is not limited to the above embodiment and can be modified into various shapes. Also, in the above embodiment, the size of the seal member which is formed on the upper surface of the main body by being sectioned by the notch portion can be arbitrarily adjusted in an area of the upper surface of the main body.

The operation of the can 20 according to the present invention having the above structure will now be described as follows.

First, to drink the beverage stored in the cavity 21, a finger is inserted in the thimble portion 34 and a force is applied toward the wrinkled portion 35.

- 5 As shown in FIGS. 4A through 4D, a bending moment is applied to the thimble portion 34 with respect to the support wrinkled portion 31 and thus the thimble portion 34 pivots toward the wrinkled portion 35. Thus, part of the notch portion 24 is slightly open by the initial destruction portion 36 formed at the thimble portion 34. When force is applied more to the thimble portion 34 in
- 10 this state, the notch portion 24 is continuously cut and the cavity 21 is disclosed and the wrinkled portion 35 is bent. Here, since the wrinkled portion 35 is formed at the second inclined portion of the seal member 30, banding the wrinkled portion 35 can be smoothly performed with a small force.

- When the cavity 21 of the main body 22 is open and the can 20 is
- 15 inclined to pour the beverage from the can, since the beverage flow guiding portion 26 is formed around the open inlet, the beverage stored in the can flows not touching the outside corner of the main body 22, as shown in FIG. 5.

- FIG. 6 is a plan view showing a can according to a second preferred
- 20 embodiment of the present invention. FIG. 7 is a sectional view taken along lines B-B of FIG. 6.

- As shown in the drawings, the can includes a seal member 40
- sectioned by the arc shaped or circular notch portion 24 formed on the upper surface 23 of the main body 22, a protruding tab 41 formed at the seal
- 25 member 40 adjacent to the notch portion 24, and a wrinkled portion 42 formed around the protruding tab 41 to be cut according to the notch portion which is cut by pivoting of the protruding tab 41. The protruding tab 41 and the wrinkled portion 42 are integrally formed with the seal member 40 by beading-processing the seal member 40. An initial destruction portion 43 for initially
- 30 guiding the destruction of the notch portion when the protruding tab 41 pivots is formed at the protruding tab 41. A beverage flow guiding portion 44 is

formed around the notch portion 24 on the upper surface of the main body. Since the structures of the initial destruction portion 43 and the beverage flow guiding portion 44 are the same as those in the above embodiment, the description thereof will be omitted.

- 5 When the protruding tab 41 is pushed toward the wrinkled portion 42 in the can having the above structure, the notch portion is initially cut by the integrally formed initial destruction portion 43. In this state, when an external force is further applied to the protruding portion 41 toward the wrinkled portion 42, the wrinkled portion 42 is bent and the cavity is disclosed, so that a user
10 can drink the beverage stored in the cavity.

FIG. 8 is a plan view showing a can according to a third preferred embodiment of the present invention. FIG. 9 is a sectional view taken along lines C-C of FIG. 8.

- As shown in the drawings, the can includes at least a pair of protruding
15 tabs 51 and 52 at a seal member 50 sectioned by the arc shaped or circular notch portion 24 formed on the upper surface 23 of the main body 22, and a boundary notch portion 24a is formed between the protruding tabs 51 and 52. An initial destruction portion 53 for initially destroying and cut the boundary notch portion when the protruding tabs 51 and 52 are bent is further provided
20 at the sides of the protruding tabs 51 and 52 facing each other.

- In the can having the above structure, when the protruding tabs 51 and 52 are strongly pressed by the fingers of a user toward each other, the protruding tabs 51 and 52 fell in directions facing each other and the boundary notch portion 24a is destroyed. Thus, the cavity 21 of the main body is
25 disclosed so that the user can drink the beverage stored in the cavity.

FIG. 10 is a plan view showing a can according to a fourth preferred embodiment of the present invention. FIG. 11 is a perspective view showing the state in which the cavity is open.

- As shown in the drawings, a circular beading portion 61 is formed on
30 the upper surface of the main body 22 having the cavity 21 in which beverage are stored. At least one protruding tab 62 sectioned by a central notch portion

24b is formed at the central portion of the beading portion 61. A circular notch portion 24c connected to the central notch portion 24b and separated a predetermined distance so as to form an opening when the notch portion on the upper surface of the main body is cut, is formed. An initial destruction
5 portion 63 is further provided at the protruding tab 62.

In the can having the above structure, the central notch portion 24b is cut by pushing the protruding tab to one side and the circular notch portion 24c is cut by pulling the cut protruding tab 62. Here, since the circular notch portion 24c forms a closed circuit having an opening, when the circular notch
10 portion 24c is cut, the upper surface of the main body 22 is partially cut. In this state, the cavity is open by pushing the cut upper surface toward the cavity of the main body.

FIG. 12 is a plan view showing a can according to a fifth preferred embodiment of the present invention.

As shown in the drawing, a pressed tab 71, of which the upper surface is formed by a circularly beading and pressing method, is formed on the upper surface of the main body 22 having the cavity 21 where beverage are contained. The pressed tab 71 preferably has an extension portion 72 extended a predetermined length from a base portion of the main body. A
20 central notch portion 24d is formed around a base portion of the pressed tab on the upper surface of the main body. A circular notch portion 24e connected to the central notch portion and forming an opening by being cut is formed on the upper surface of the main body. The pressed tab 71 is further provided with an initial destruction portion 72.

In the can having the above structure, the pressed tab 71 pivots to cut the central notch portion 24d. As the central notch portion 24d is cut, the separated pressed tab 71 is pulled to cut the circular notch portion 24e. Here, since the circular notch portion 24e forms a closed circuit having an opening, when the circular notch portion 24e is cut, part of the upper surface of the
30 main body 22 is cut. In this state, the cavity is open by pushing the cut upper surface toward the cavity of the main body.

Industrial Applicability

The cans according to the above preferred embodiments have the following advantages.

First, since the thimble portion, the protruding tab, or the pressed tab
5 is formed on the upper surface of the main body and these pivot by a small force, the notch portion is destroyed and the wrinkled portion formed at the seal member is bent so that the cavity is open.

Second, since the thimble portion protects the finger of a user, the damage to the finger nails generated when the user pivots the tab can be
10 prevented.

Third, since the opening of the cavity can be formed to be large, the flow of beverage in the cavity is smooth. Also, since the beverage flow guiding portion is formed around the opening, the beverage do not touch the corner of the main body so that a sanitary state can be maintained.

Fourth, since a small ring (a tab opener) formed on the upper surface
15 of the main body to open the cavity of the can is not needed, the structure of the can is simple and productivity in manufacturing can be improved.

It is noted that the present invention is not limited to the preferred embodiment described above, and it is apparent that variations and
20 modifications by those skilled in the art can be effected within the spirit and scope of the present invention defined in the appended claims.

What is claimed is:

1. A can comprising:
 - a main body having an inside cavity;
 - a seal member sectioned by an arc shaped notch portion formed on an
 - 5 upper surface of the main body;
 - a thimble portion formed at the seal member adjacent to the notch portion; and
 - a wrinkled portion formed at the seal member to be bent in a wave shape when the notch portion of the main body is destroyed.
- 10 2. The can of claim 1, further comprising an initial destruction portion formed near the thimble portion for initially destroying the notch portion when the thimble portion is bent.
- 15 3. The can of claim 1, wherein the initial destruction portion is formed by making the outer circumferential surface of the thimble portion sharply bent toward the notch portion at the boundary portion between the thimble portion and the seal member.
- 20 4. The can of claim 3, wherein the notch portion adjacent to the initial destruction portion is formed to be deeper than the nearby notch portion.
5. The can of claim 1, further comprising a support wrinkled portion formed by stepping the seal member around the thimble portion.
- 25 6. The can of claim 1, wherein a beverage flow guiding portion is formed on the upper surface of the main body adjacent to the notch portion.
7. A can comprising:
 - 30 a main body having a predetermined cavity for storing beverage;
 - a seal member sectioned by an arch shaped notch portion formed on

an upper surface of the main body and having first and second inclined portions with respect to a support wrinkled portion formed with a step;

a thimble portion formed at the seal member such that the support wrinkled portion adjacent to the notch portion can be vertically disposed at a

5 central portion thereof;

a wrinkled portion formed at the second inclined portion and bent in a wave shape when the notch portion is destroyed; and

an initial destruction portion formed at a portion adjacent to the thimble portion and the notch portion for initially destroying the notch portion when the

10 thimble portion is bent.

8. The can of claim 7, wherein a skirt portion is formed between an edge of the first and second inclined portions and the main body.

15 9. The can of claim 7, wherein a beverage flow guiding portion is formed around the notch portion on the upper surface of the main body

10. A can comprising:

a main body having a cavity for storing beverage;

20 a seal member sectioned by an arc shaped notch portion formed on an upper surface of the main body;

a protruding tab formed at the seal member adjacent to the notch portion; and

25 a wrinkled portion formed around the protruding tab to be bent when the notch portion is destroyed as the protruding tab is bent.

11. The can of claim 10, further comprising an initial destruction portion formed to extend from the protruding tab toward the notch portion for destroying the notch portion when the protruding tab is bent.

30

12. The can of claim 10, further comprising a beverage flow guiding

portion on the upper surface around the notch portion.

13. A can comprising:

a main body having a cavity for storing beverage;

5 a seal member sectioned by an arc shaped notch portion formed on the upper surface of the main body;

at least a pair of protruding tabs formed at the seal member; and

a boundary notch portion formed between the protruding tabs.

10 14. The can of claim 13, further comprising an initial destruction portion formed to extend from each of the protruding tabs toward the boundary notch portion for destroying the boundary notch portion when the protruding tabs are bent.

15 15. A can comprising:

a main body having a cavity for storing beverage;

a protruding tab disposed at the center of a circular beading portion formed on an upper surface of the main body;

a central notch portion formed around the protruding tab; and

20 a circular notch portion connected to the central notch portion and separated at a predetermined distance and having an opening on the upper surface of the main body.

16. The can of claim 15, further comprising an initial destruction
25 portion formed to extend from the protruding tab toward the boundary notch portion for destroying the central notch portion when the protruding tab is bent.

17. A can comprising:

a main body having a cavity for storing beverage;

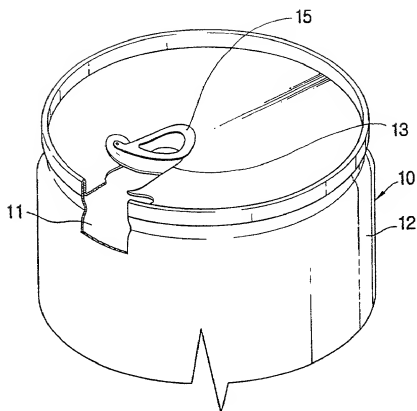
30 a pressed tab formed by pressing a protruding portion formed by beading in a circular shape on the upper surface of the main body; and

a circular notch portion connected to a central notch portion formed around the pressed tab and the central notch portion and forming an opening on the upper surface of the main body when being cut.

Figure 1. Schematic representation of the experimental design. The subjects were divided into two groups: the control group (CG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG). The CG was divided into two subgroups: the control group (CG) and the control group (CG). The EG was divided into two subgroups: the experimental group (EG) and the experimental group (EG).

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FIG. 1



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FIG. 2

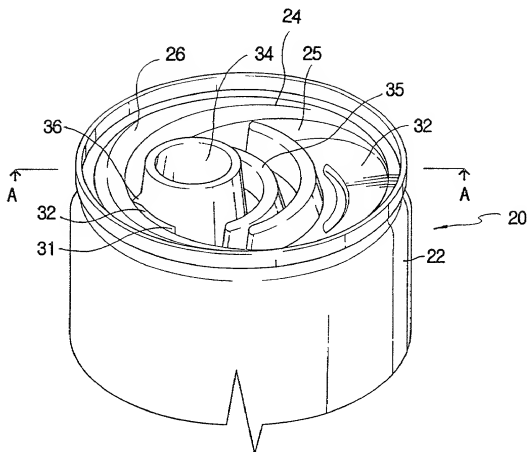


FIG. 3



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FIG. 4a

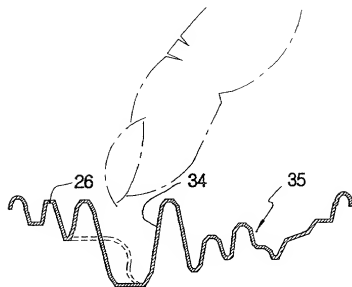


FIG. 4b

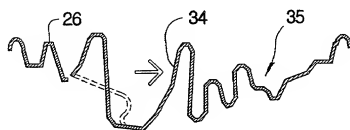
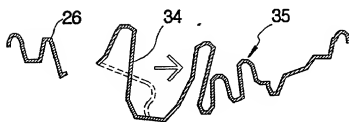


FIG. 4c



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FIG. 4d

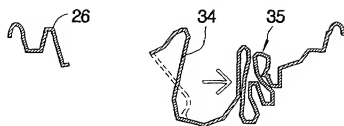
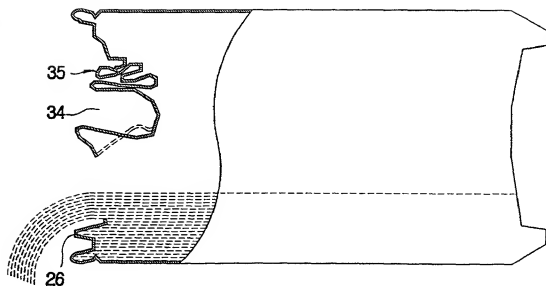


FIG. 5



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FIG. 6

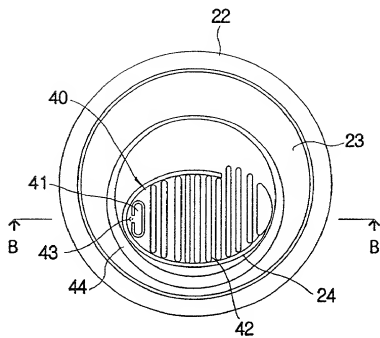
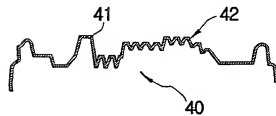


FIG. 7



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FIG. 8

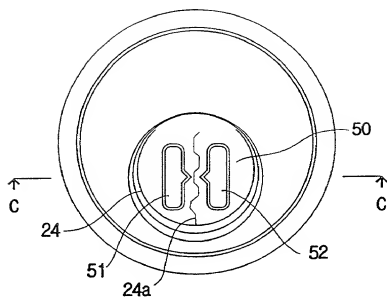
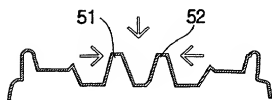


FIG. 9



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FIG. 10

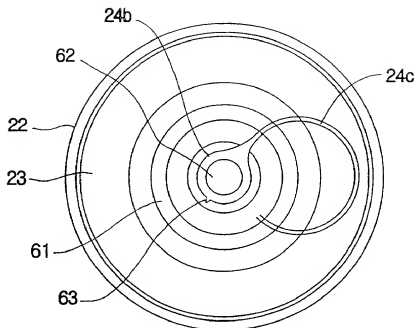
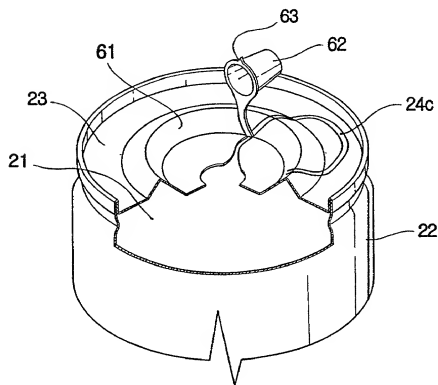


FIG. 11



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FIG. 12

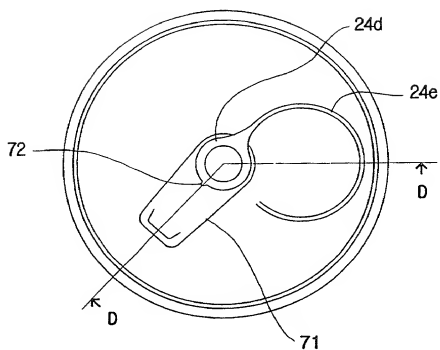
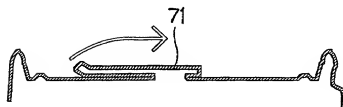


FIG. 13



**RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

CAN

the specification of which (check applicable box(es)):

- ☐ is attached hereto
☐ was filed on _____ as U.S. Application Serial No. _____ (Atty Okt. No. _____)
☐ was filed as PCT International application No. _____ on _____
 and (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 C.F.R. 1.56. I hereby claim foreign priority benefits under 35 U.S.C. 119/365 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed or, if no priority is claimed, before the filing date of this application:

Priority Foreign Application(s):

Application Number
99-10868

Country
Rep. of Korea

Day/Month/Year Filed
29/03/1999

I hereby claim the benefit under 35 U.S.C. §119(e) of any United States provisional application(s) listed below.

Application Number

Date/Month/Year Filed

I hereby claim the benefit under 35 U.S.C. 120/365 of all prior United States and PCT international applications listed above or below and, insofar as the subject matter of each of the claims of this application is not disclosed in such prior applications in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose material information as defined in 37 C.F.R. 1.56 which occurred between the filing date of the prior applications and the national or PCT international filing date of this application:

Prior U.S./PCT Application(s):

Application Serial No.

Day/Month/Year Filed

Status: patented
pending, abandoned

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon. And I hereby appoint **NIXON & VANDERHYE P.C., 1100 North Glebe Rd., 8th Floor, Arlington, VA 22201-4714, telephone number (703) 816-4600 (to whom all communications are to be directed),** and the following attorneys thereof (of the same address) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent: **Arthur R. Crawford, 25327; Larry S. Nixon, 25640; Robert A. Vanderhye, 27078; James T. Hosmer, 30164; Robert W. Fada, 31352; Richard G. Beshar, 22770; Mark E. Nussbaum, 32348; Michael J. Keenan, 32105; Bryan H. Davidson, 30251; Stanley C. Spooner, 27393; Leonard C. Mitchard, 29005; Duane M. Byers, 33363; Jeffrey H. Nelson, 30481; John R. Lastowa, 33149; H. Warren Burnam, Jr., 29366; Thomas E. Byrne, 32205; Mary J. Wilson, 32895; J. Scott Davidson, 33489; Alan M. Kagan, 38178; William J. Griffin, 31260; Robert A. Molan, 28834; B. J. Sadoff, 36563; James D. Berquist, 34776; Updeep S. Gill, 37334; Michael J. Shea, 34725; Donald L. Jackson, 41050; Michelle N. Lester, 32331; Frank P. Presta, 19928; Joseph S. Presta, 35329.**

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 Inventor: _____ (first) _____ (last) (citizenship)
 Residence: (city) _____ (state/country) _____
 Post Office Address: _____
 (Zip Code) _____

FOR ADDITIONAL INVENTORS, check box ☐ and attach sheet with same information and signature and date for each.